Complete Summary

GUIDELINE TITLE

Clinical guideline on appropriate use of antibiotic therapy for pediatric dental patients.

BIBLIOGRAPHIC SOURCE(S)

American Academy of Pediatric Dentistry (AAPD). Clinical guideline on appropriate use of antibiotic therapy for pediatric dental patients. Chicago (IL): American Academy of Pediatric Dentistry (AAPD); 2005. 3 p. [26 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: American Academy of Pediatric Dentistry. Clinical guideline on appropriate use of antibiotic therapy. Chicago (IL): American Academy of Pediatric Dentistry; 2001. 2 p.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Pediatric dental diseases requiring antibiotic therapy, including oral wounds, dental trauma, orofacial infections, and periodontal disease

GUIDELINE CATEGORY

Management
Treatment

CLINICAL SPECIALTY

Dentistry
Pediatrics

INTENDED USERS

Allied Health Personnel
Dentists
Nurses
Physicians

GUIDELINE OBJECTIVE(S)

To provide guidance in the proper and judicious use of antibiotic therapy in the treatment of oral conditions

TARGET POPULATION

Infants, children, and adolescents with oral conditions requiring antibiotic therapy

INTERVENTIONS AND PRACTICES CONSIDERED

1. Antibiotic therapy
    - Intravenous
    - Intramuscular
    - Oral
2. Monitoring of clinical effectiveness of antibiotic therapy
    - Culture and susceptibility testing of isolates from the infective site
3. Duration of drug therapy
4. Patient education regarding the importance of completing a full course of antibiotics
5. Tooth extraction
6. Assessment of anesthesia requirements
7. Additional birth control measures for patients taking antibiotics and oral contraceptives

MAJOR OUTCOMES CONSIDERED

Incidence of antibiotic resistant bacteria colonization

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A MEDLINE search was conducted using the keywords "antibiotic therapy," "antibacterial agents in children," "dental trauma," "oral wound management," and "orofacial infections."

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The oral health policies and clinical guidelines of the American Academy of Pediatric Dentistry (AAPD) are developed under the direction of the Board of Trustees, utilizing the resources and expertise of its membership operating through the Council on Clinical Affairs (CCA).

Proposals to develop or modify policies and guidelines may originate from 4 sources:

1. The officers or trustees acting at any meeting of the Board of Trustees
2. A council, committee, or task force in its report to the Board of Trustees
3. Any member of the AAPD acting through the Reference Committee hearing of the General Assembly at the Annual Session
4. Officers, trustees, council and committee chairs, or other participants at the AAPD's Annual Strategic Planning Session

Regardless of the source, proposals are considered carefully, and those deemed sufficiently meritorious by a majority vote of the Board of Trustees are referred to the CCA for development or review/revision.

Once a charge (directive from the Board of Trustees) for development or review/revision of an oral health policy or clinical guideline is sent to the CCA, it is assigned to 1 or more members of the CCA for completion. CCA members are

instructed to follow the specified format for a policy or guideline. All oral health policies and clinical guidelines are based on 2 sources of evidence: (1) the scientific literature; and (2) experts in the field. Members may call upon any expert as a consultant to the council to provide expert opinion. The Council on Scientific Affairs provides input as to the scientific validity of a policy or guideline.

The CCA meets on an interim basis (midwinter) to discuss proposed oral health policies and clinical guidelines. Each new or reviewed/revised policy and guideline is reviewed, discussed, and confirmed by the entire council.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Once developed by the Council on Clinical Affairs (CCA), the proposed policy or guideline is submitted for the consideration of the Board of Trustees. While the board may request revision, in which case it is returned to the council for modification, once accepted by majority vote of the board, it is referred for Reference Committee hearing at the upcoming Annual Session. At the Reference Committee hearing, the membership may provide comment or suggestion for alteration of the document before presentation to the General Assembly. The final document then is presented for ratification by a majority vote of the membership present and voting at the General Assembly. If accepted by the General Assembly, either as proposed or as amended by that body, the document then becomes the official American Academy of Pediatric Dentistry (AAPD) oral health policy or clinical guideline for publication in the AAPD's Reference Manual and on the AAPD's Web site.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Conservative use of antibiotics is indicated to minimize the risk of developing resistance to current antibiotic regimens. The following general principles should be adhered to when prescribing antibiotics for the pediatric population.

Oral Wound Management

Oral wounds are associated with an increased risk of bacterial contamination as 1 mL of saliva contains 10^{8-9} bacteria. Based upon the amount of bacterial contamination, wounds can be classified as: (1) clean, (2) potentially contaminated, or (3) contaminated/dirty. If the insult to the oral cavity/dentition appears to be have been contaminated by extrinsic bacteria, antibiotic therapy should be considered. If it is determined that antibiotics would be beneficial to the healing process, the timing of the administration of antibiotics is critical in order to supplement the natural host resistance in bacterial killing. The drug should be administered as soon as possible for the best result. The most effective route of drug administration (intravenous vs intramuscular vs oral) also must be considered. The clinical effectiveness of the drug also must be monitored. If the infection is not responsive to the initial drug selection, a culture and susceptibility testing of isolates from the infective site may be indicated. The minimal duration of drug therapy should be limited to 5 days beyond the point of substantial improvement or resolution of signs and symptoms; this is usually a 5- to 7-day course of treatment dependent upon the specific drug selected. The importance of completing a full course of antibiotic must be emphasized. If the patient discontinues the antibiotic prematurely, the surviving bacteria can restart an infection that may be resistant to the original antibiotic. Examples of oral wounds are: (1) soft tissue laceration, (2) complicated crown fracture (i.e., pulp exposure), (3) severe tooth displacement, (4) extensive gingivectomy, or (5) severe ulcerations.

Special Conditions

Pulpitis/Apical Periodontitis/Draining Sinus Tract/Localized Intraoral Swelling

Bacteria can gain access to the pulpal tissue through caries, exposed pulp or dentinal tubules, cracks into the dentin, and defective restorations. If a child presents with acute symptoms of pulpitis, treatment should be rendered (i.e., pulpotomy, pulpectomy, or extraction). Antibiotic therapy usually is not indicated if the dental infection is contained within the pulpal tissue or the immediately surrounding tissue. In this case, the child will have no systemic signs of an infection (i.e., no fever and no facial swelling).

Acute Facial Swelling of Dental Origin

A child presenting with a facial swelling secondary to a dental infection should receive immediate dental attention. Depending on clinical findings, treatment may consist of treating or extracting the tooth/teeth in question with antibiotic coverage or prescribing antibiotics for several days to contain the spread of infection and then treating the involved tooth/teeth. The clinician should consider the ability to obtain adequate anesthesia, the severity of the infection, and the medical status of the child. Intravenous antibiotic therapy and/or referral for medical management may be indicated.

Dental Trauma

Local application of an antibiotic to the root surface of an avulsed tooth has been recommended to reduce root resorption and increase the rate of pulpal revascularization. Systemic antibiotics have been recommended as an adjunctive

therapy to the recovery of a severely injured tooth/teeth. However, the value of systemic antibiotics in oral wound healing remains unclear.

Pediatric Periodontal Diseases (e.g., Neutropenias, Papillon-LeFevre Syndrome, Leukocyte Adhesion Deficiency)

In pediatric periodontal diseases, the immune system is unable to control the growth of periodontal pathogens, thus necessitating antibiotic therapy. Culture and susceptibility testing of isolates from the involved sites is helpful in guiding the drug selection. Prolonged antibiotic therapy may be indicated in the management of chronic periodontal disease, especially if the underlying immunodeficiency is not corrected. Subsequent cultures are beneficial in determining the timing of the endpoint of antibiotic therapy.

Viral Diseases

Conditions such as acute primary herpetic gingivostomatitis should not be treated with antibiotic therapy unless there is strong evidence to indicate that a secondary bacterial infection exists.

Oral Contraceptive Use

Whenever an antibiotic is prescribed to a female patient taking oral contraceptives to prevent pregnancy, the patient must be advised to use additional techniques of birth control during antibiotic therapy and for at least 1 week beyond the last dose as the antibiotic may render the oral contraceptive ineffective.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

All oral health policies and clinical guidelines are based on 2 sources of evidence: (1) the scientific literature; and (2) experts in the field.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Conservative use of antibiotics is indicated to minimize the risk of developing resistance to current antibiotic regimens.

POTENTIAL HARMS

Antibiotics may render an oral contraceptive ineffective.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Chart Documentation/Checklists/Forms
Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001 (revised 2005)

GUIDELINE DEVELOPER(S)

American Academy of Pediatric Dentistry - Professional Association

SOURCE(S) OF FUNDING

American Academy of Pediatric Dentistry

GUIDELINE COMMITTEE

Council on Clinical Affairs

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

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GUIDELINE AVAILABILITY

Electronic copies: Available from the American Academy of Pediatric Dentistry Web site.

Print copies: Available from the American Academy of Pediatric Dentistry, 211 East Chicago Avenue, Suite 700, Chicago, Illinois 60611

AVAILABILITY OF COMPANION DOCUMENTS

Information about the American Academy of Pediatric Dentistry (AAPD) mission and guideline development process is available on the AAPD Web site.

The following implementation tools are available for download from the AAPD Web site:

- Dental growth and development chart
- American Academy of Pediatric Dentistry Caries-Risk Assessment Tool (CAT)

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on August 18, 2005.

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